

Caltrans Maintenance Program **Survey of Licensed California Drivers Regarding Highway Maintenance Activities**

EXECUTIVE SUMMARY



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Executive Summary

Introduction

In October 1998, the California Department of Transportation (Caltrans) contracted with the Survey Research Center (SRC) to develop and report the findings of a consumer survey of a minimum of 3,200 randomly selected California drivers in eight geographic regions of California (sample size = 400 per region) to answer the following research questions:



1. What are the general population's relative priorities regarding maintenance activities?
2. What is the general population's satisfaction with existing levels of service for specific maintenance activities?
3. What are the general population's descriptions of acceptable versus unacceptable levels of service for specified maintenance activities?
4. What is the general population's understanding of maintenance activities?

This survey was also completed for Caltrans by the SRC in 1996. Findings for both the 1998 and 1996 surveys are presented in this report.

Methodology

These research objectives were validated by Caltrans External Client/Customer Focus Group in Maintenance in 1996. Caltrans utilizes the information gathered in the 1996 study as customer input to improve their internal performance measure criteria. The surveys and information provide a baseline measurement for comparison with future year measurements of customer satisfaction. The 1998 survey provides a comparison with the 1996 baseline survey, and will serve as an additional baseline for future surveys.

Demographic Regions Used for Questionnaire

To develop a telephone questionnaire which answered each of the research questions, the Survey Research Center conducted (1) a review of the research literature on highway maintenance and (2) nine focus groups of California drivers during July 1996. Focus group participants were presented discussion topics to solicit their views, preferences and concerns about maintenance topics related to each of the research questions. Groups were held in Sacramento, Oakland, Fresno, Quincy, Redding, Eureka, Bishop, San Diego, and Santa Ana. The same regions and questionnaire were used for the 1998 survey.



The eight regions were defined by the Caltrans Maintenance Program as:

1. Eastern California (the Sierras-Desert);
 2. North Valley;
 3. Sacramento-Stockton;
 4. San Joaquin Valley (South Valley or Fresno-Bakersfield);
 5. San Francisco Bay Area;
 6. California Coast;
 7. Los Angeles Basin; and
 8. San Diego Area.
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Priorities for Maintenance Activities

California drivers in each of eight geographic regions were asked to prioritize seven categories of maintenance activities that were identical to the categories included in the National Highway User Survey (NHI) conducted by Cooper & Lybrand Opinion Research Corporation in 1995. The resultant 1998 and 1996 rankings were consistent across each of the eight California regions except that traffic flow was ranked third and pavement conditions was ranked fourth in Los Angeles in 1998, and in the Bay Area in both 1996 and 1998.

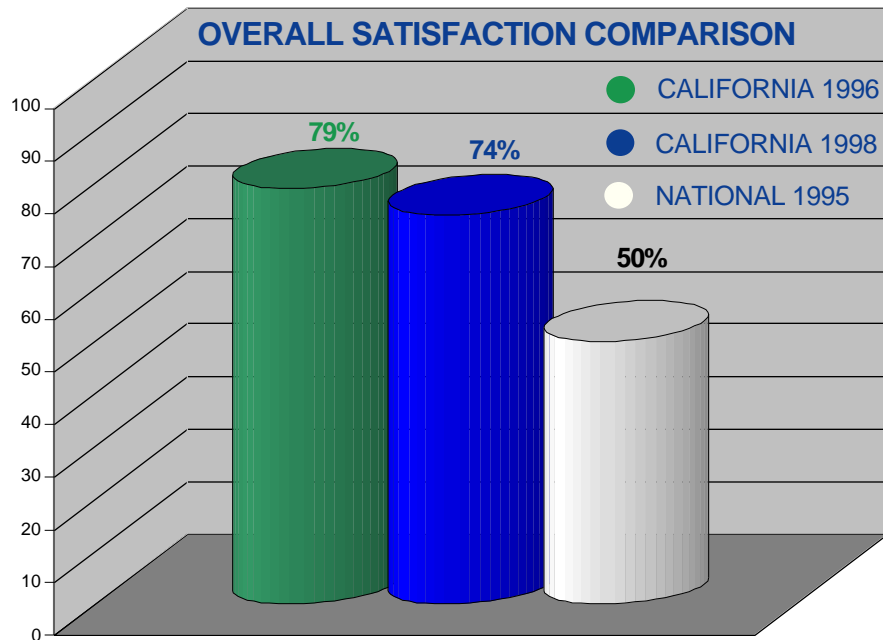


CATEGORY PRIORITIES IN DECREASING ORDER OF IMPORTANCE 1998 & 1996 CALTRANS SURVEYS VS. NATIONAL STUDY

1998 & 1996 Caltrans Surveys	National Study
1. Maintenance Response to Accidents and Natural Disasters	1. Safety
2. Safety	2. Pavement Conditions
3. Pavement Conditions	3. Traffic Flow
4. Traffic Flow	4. Maintenance Response Time
5. Bridge Maintenance	5. Bridge Conditions
6. Travel Amenities	6. Travel Amenities
7. Visual Appeal	7. Visual Appeal

Satisfaction with Existing Levels of Service

In the 1998 Caltrans survey, 74% (a score of 7.4 out of 10) of California drivers were satisfied with the job the Caltrans Maintenance Program was doing, while only 50% of NHI's respondents were either "satisfied" or "very satisfied" with the national highway system. Similarly, fewer respondents reported being dissatisfied



with Caltrans in 1998 (6.9%) and in 1996 (6.0%) than with the national highway system (16%).¹ In general, drivers who were asked about California's state highways in the Caltrans surveys conducted by the SRC were more satisfied than those asked about national highways in the Cooper & Lybrand study (1995). The most notable difference was with maintenance response time where 66.7% in 1998 and 73% in 1996 were highly satisfied with California's state highways, but only 50% were "satisfied" or "very satisfied" with the national highway system in the Cooper & Lybrand study. The only category where satisfaction with the national highways was higher than California's state highways was in visual appeal by a small percentage.

¹One should note some cautions in this comparison. The SRC used neither the same wording nor the same response options as did NQI. To make this analysis comparable, SRC's 1 to 10 scale was divided in half to accommodate NQI's 1 to 5 scale. One should also note that although the wording of NQI's question attempted to assess satisfaction with the national highway system, this perception is undoubtedly influenced by local highway systems. Therefore, to make a truly objective comparison, one should take out California respondents from the national survey since these respondents might reflect an inflation in the national survey's reported findings.

Satisfaction with Maintenance Activities

California drivers who responded to the 1998 and 1996 surveys were asked to rate their satisfaction with specific maintenance activities within each of the seven maintenance categories. Each respondent rated satisfaction on a scale from one to ten with one indicating extreme dissatisfaction to ten indicating extreme satisfaction.

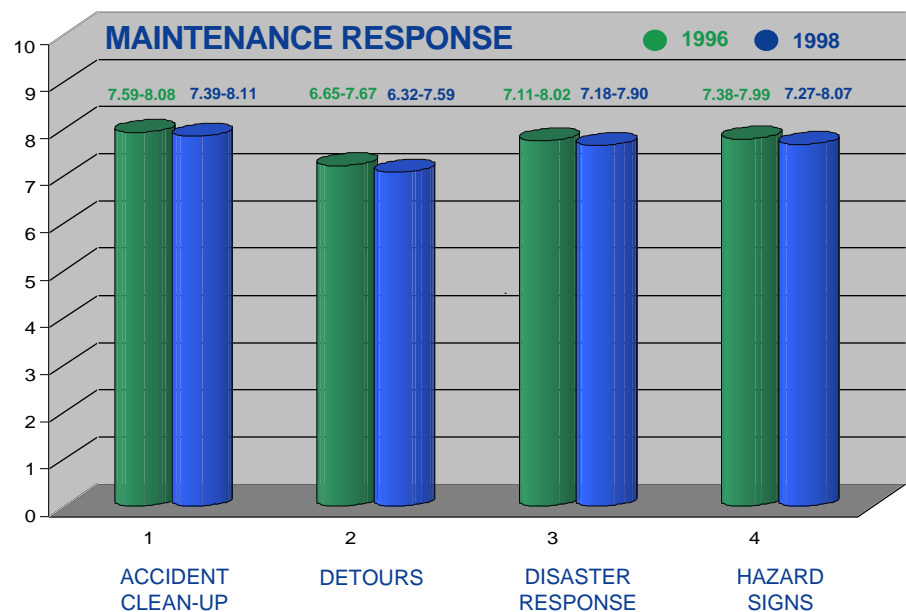


1. MAINTENANCE RESPONSE

Maintenance response included:

- removal and cleanup of hazardous spills and debris from accidents;
- detours around accidents or closures;
- response to natural disasters; and
- signs about temporary hazards.

Rankings for these items ranged from a low of 6.32 to a high of 8.11 in 1998. In 1996, rankings ranged from a low of 6.65 to a high of 8.08. Removal and cleanup of hazardous spills, response to natural disasters, and signs about temporary hazards were ranked lower in the Bay Area than in the other seven regions. Removal and cleanup of hazardous spills and response to natural disasters received their highest rankings in San Diego for 1998.



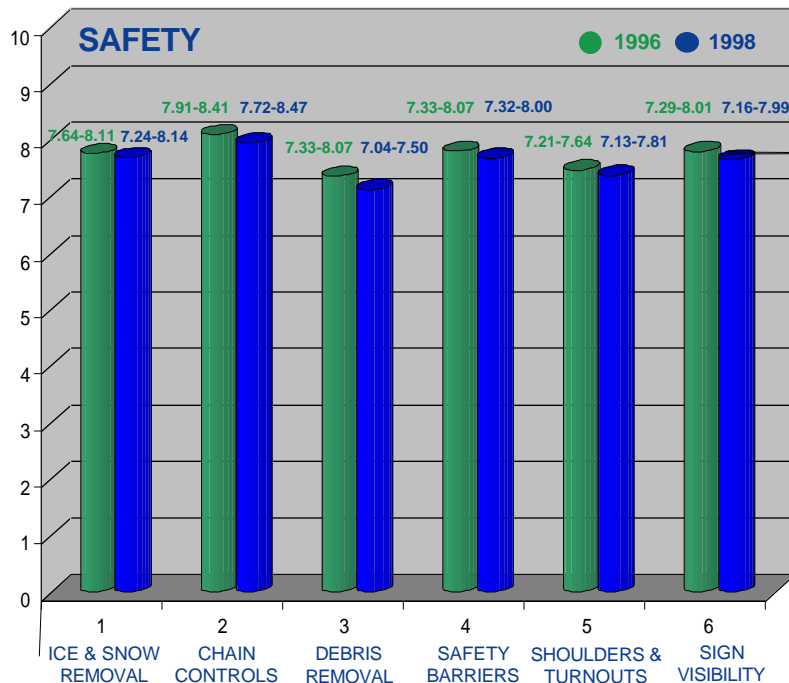


2. SAFETY

The six items related to the safety category included:

- ice and snow removal;
- chain controls;
- debris removal;
- safety barriers;
- maintenance of shoulders and turnouts; and
- sign visibility.

For 1998, all safety items were ranked 7.04 or higher in each of the eight geographic regions. In the 1996 survey, rankings were 7.21 or higher. Rankings for the Bay Area were lower than for the other seven regions on all items except chain controls. Rankings for all safety items were higher for San Diego than for any of the other seven regions in both 1998 and 1996.



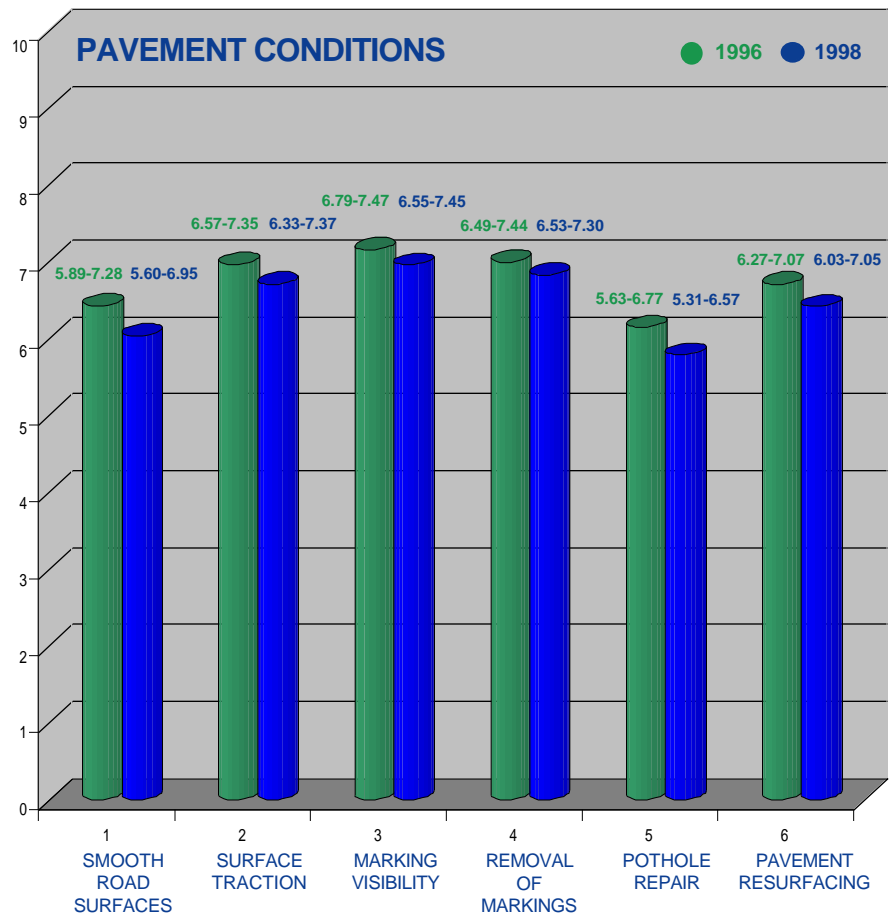


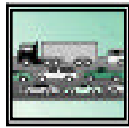
3. PAVEMENT CONDITIONS

The six items related to pavement conditions included:

- smooth road surfaces;
- surface traction;
- visibility of pavement markings;
- removal of old pavement markings;
- pothole repairs; and
- pavement resurfacing.

Satisfaction ratings ranged from a low of 5.31 to a high of 7.45 for 1998. In 1996, ratings ranged from 5.63 to 7.47. Ratings by Bay Area drivers were lower than drivers in the other regions for both 1998 and 1996 with ratings of 5.31 to 6.55 and 5.89 to 6.79 respectively. In contrast, ratings by San Diego drivers in the 1998 and 1996 surveys were higher than for the other seven regions with ratings of 6.57 to 7.45 and 6.77 to 7.47 respectively.



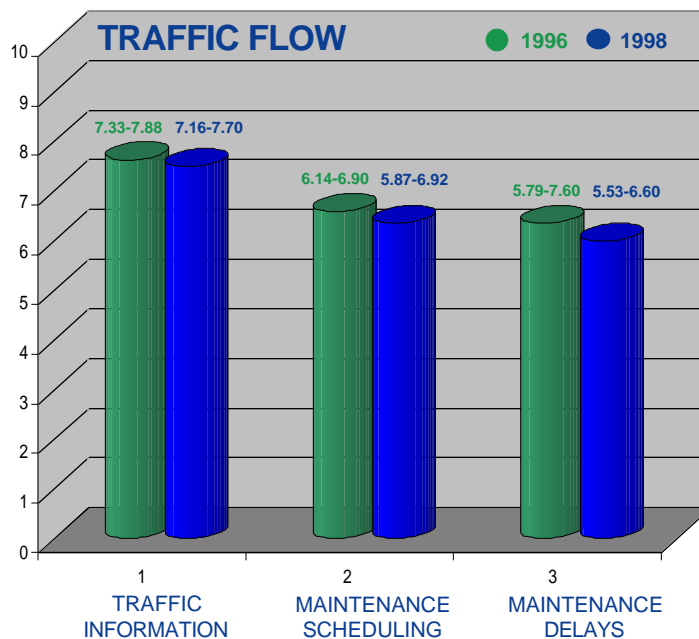


4. TRAFFIC FLOW

Traffic flow items included:

- traffic information;
- maintenance scheduling; and
- maintenance delays.

When California drivers were asked where they prefer to receive information about traffic conditions, more prefer radio than any other media. Television and road signs were more heavily favored in the Bay Area, San Diego, Los Angeles, the San Joaquin Valley and the Coast than the 800 telephone number (1-800-427-ROAD). In contrast, the 800 number was more heavily favored in Eastern California, the North Valley, and Sacramento than television and road signs. Overall satisfaction ratings for the three traffic flow items ranged from 5.53 to 7.70 in 1998. In 1996, ratings ranged from 5.79 to 7.88. The satisfaction rating for traffic information was lowest in the Bay Area in 1998 with a rating of 7.16 and lowest along the California Coast in 1996 with a rating of 7.33. Ratings for maintenance scheduling and maintenance delays were lower in the Bay Area than in any of the other seven regions for both 1998 and 1996. These ratings ranged from 5.53 to 6.92 in 1998 and 5.79 to 6.90 in 1996.



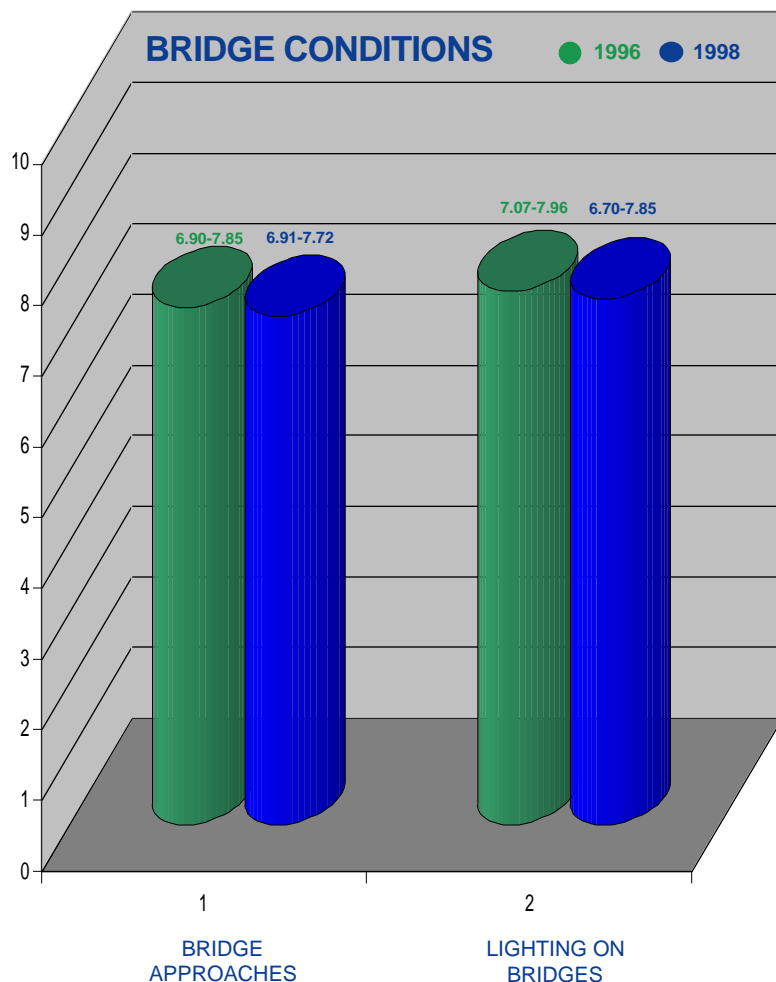


5. BRIDGE CONDITIONS

California drivers were asked to rate their satisfaction with two items related to bridge conditions. These included:

- bridge approaches; and
- lighting on bridges.

In both the 1998 and 1996 surveys, drivers rated maintenance of bridge approaches lower in the Bay Area at 6.91 and 6.90 respectively, and higher in San Diego at 7.72 and 7.85 respectively, than in the other six regions. Maintenance of bridge lighting was rated lower in both 1998 and 1996 in Eastern California at 6.70 and 7.07 respectively, and higher in San Diego at 7.85 and 7.96 respectively, than in the other regions.



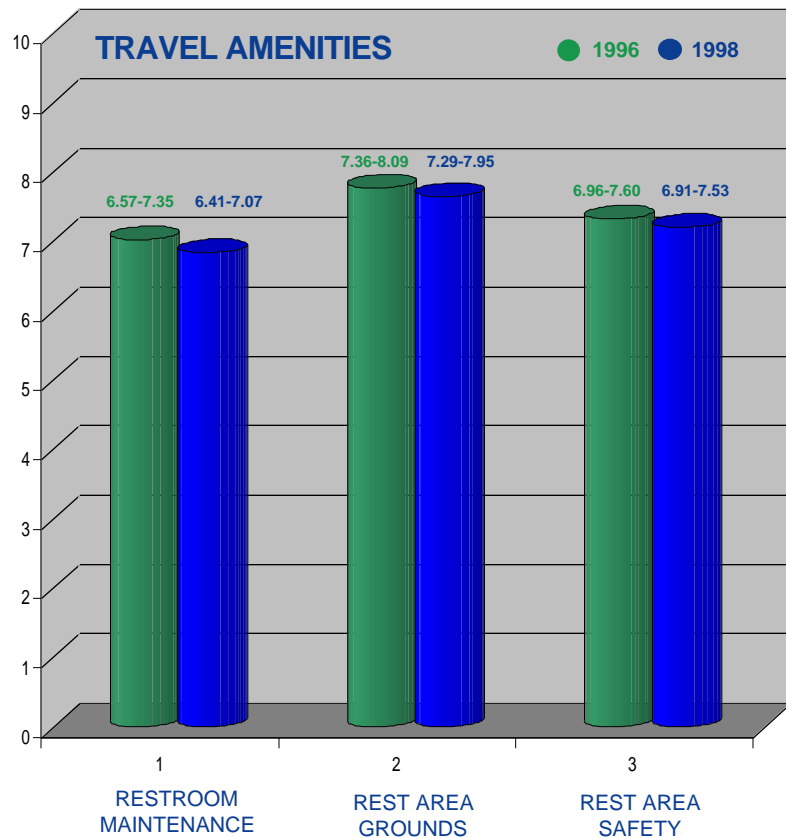


6. TRAVEL AMENITIES

Travel amenities included:

- restroom maintenance at rest areas;
- rest area grounds maintenance; and
- safety and lighting at rest areas.

For 1998, the highest ratings for all three travel amenity items were given by California Coast drivers. In contrast, Bay Area drivers gave the lowest ratings for each travel amenity. In 1996, satisfaction ratings for travel amenities were generally lower among California drivers from urban areas than those from the more rural areas of Eastern California, the San Joaquin Valley, and the North Valley.



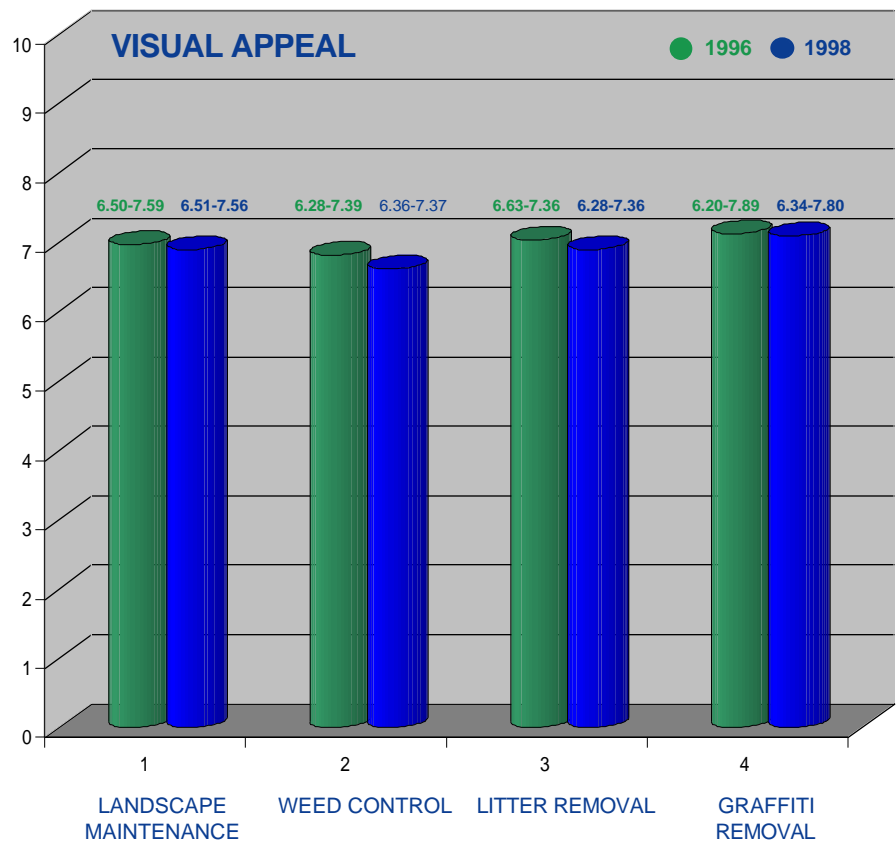


7. VISUAL APPEAL

California drivers were asked about four items related to visual appeal including:

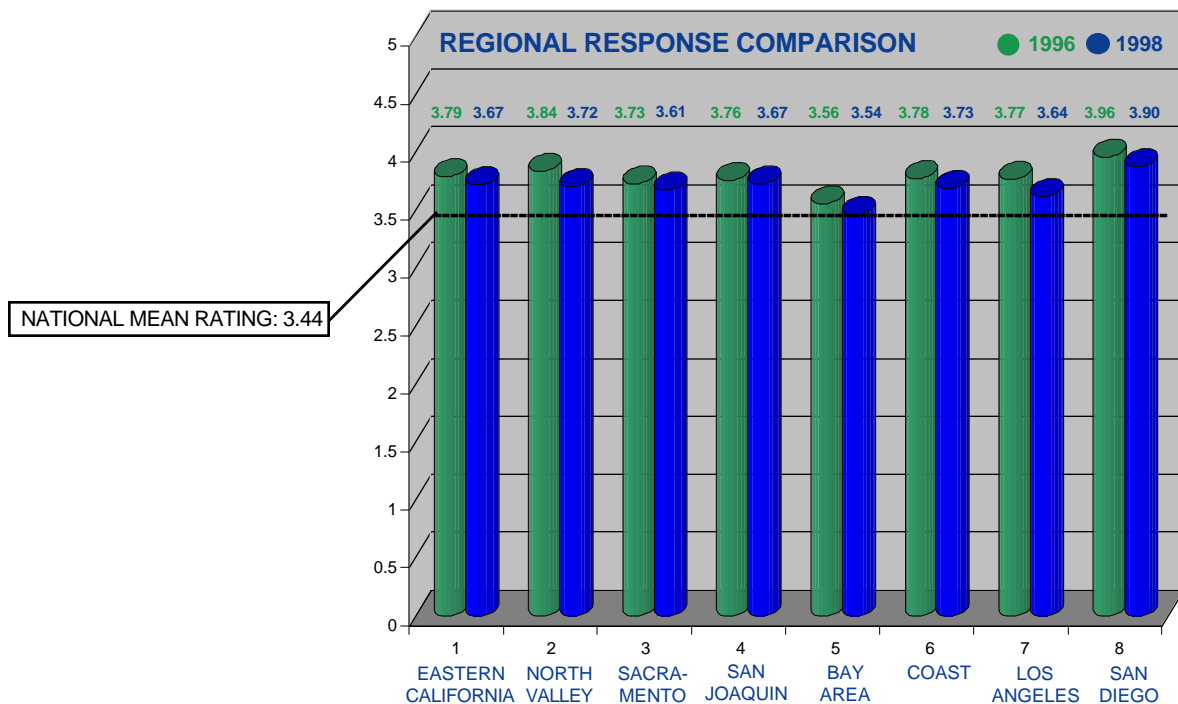
- landscape maintenance;
- weed control;
- litter removal; and
- graffiti removal.

For 1998, Bay Area drivers gave the lowest ratings for landscape maintenance, litter removal, and graffiti removal. San Diego drivers gave the highest ratings on landscape maintenance, weed control, and litter removal. In the 1996 survey, ratings for Sacramento and the Bay Area were lower than for the other six regions on most of these items.



OVERALL MEASURES

California drivers were asked to rate trip quality and overall satisfaction with Caltrans maintenance. The 1998 ratings for trip quality ranged from 7.08 in the Bay Area to 7.80 in San Diego. In 1996, ratings ranged from 7.11 for the overall satisfaction rating in the Bay Area, to a high of 7.91 in San Diego. The 1995 National Highway User Survey by Cooper & Lybrand, which used a five-point satisfaction scale with 5 as very satisfied and 1 as very dissatisfied, had a mean rating of 3.44 for overall satisfaction with the national highway system. Ratings were lower in the West than in the South and North Central states. For purposes of comparison with the findings of this study, the mean ratings for California regions, which were made on a 10-point scale, were divided by two. Thus, mean ratings for satisfaction with highway maintenance in California ranged from a low of 3.54 for the Bay Area to a high of 3.90 in San Diego for 1998, and 3.56 for the Bay Area to a high of 3.96 for San Diego in 1996. Overall satisfaction ratings for highway maintenance in the eight California regions presented in this study were higher for both 1998 and 1996 than the 1995 national ratings for overall satisfaction with the national highway system as reported by Cooper & Lybrand (1995).



Acceptable Levels of Service

The last series of questions asked California drivers to state an acceptable amount of time for Caltrans to provide nine different services. (Note: These responses were made by survey respondents without discussion of budgetary constraints.)

Sign Repair - Approximately half of the 1998 and 1996 respondents stated that sign repair should take one day or less.



Guard Rail and Safety Barrier Repair - A majority of respondents in all regions for both the 1998 and 1996 surveys indicated that guard rails and safety barriers should be repaired within three days or less.

Light (Luminaire) Repair - For 1998, about half of all respondents indicated that lights should be repaired within one day, and 78% said they should be repaired within three days. Except for Sacramento, more than half of the 1996 respondents stated that lights should be repaired within one day.

Traffic Delays Due to Maintenance Work - Approximately half the 1998 drivers in all eight regions indicated that traffic delays due to maintenance work should not exceed 15 minutes. For both 1998 and 1996, most drivers in all regions indicated that traffic delays should never exceed 30 minutes.

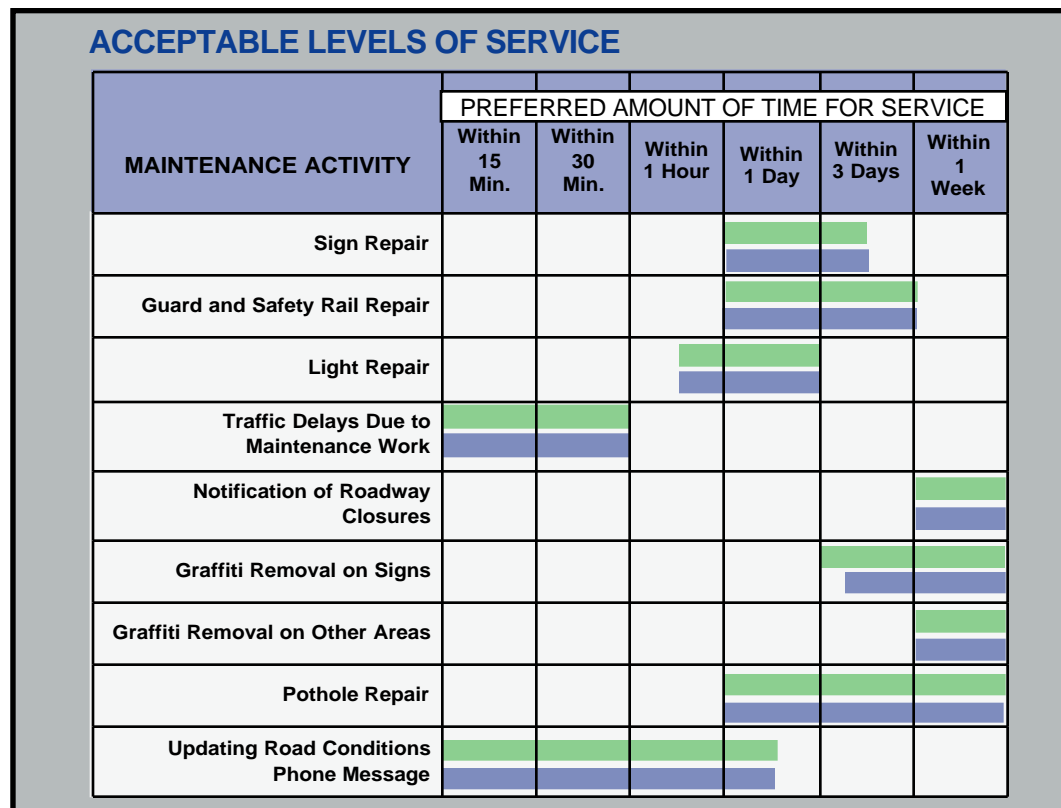
Public Notification of Roadway Closures or Partial Closures - In both the 1998 and 1996 surveys, most drivers stated that seven days or less was an acceptable amount of time for public notification prior to road closures.

Graffiti Removal on Signs - For 1998, 60% or more of drivers in all eight regions said that removal should be within seven days. In 1996, a majority of drivers in five regions stated that graffiti should be removed from signs within three days as contrasted with only one region in 1998.

Graffiti Removal From Other Areas - More than 70% of 1998 drivers in five regions and 1996 drivers in seven regions stated that graffiti should be removed from other areas within a week or less. More than two-thirds of 1998 drivers in all regions except the Bay Area said graffiti should be removed within a week or less.

Pothole Repair - In all eight regions, over 80% of 1998 and 1996 drivers indicated that potholes should be repaired within a week. A majority of 1998 drivers in all regions stated that potholes should be repaired within three days. In 1996, a majority of drivers in four regions said that potholes should be repaired within three days.

Updating the Road Conditions Phone Message - Over one-third of the 1998 drivers in Eastern California, Sacramento, the Bay Area, and San Diego wanted the 800 phone message on road conditions updated within an hour. Drivers in the other four regions stated a willingness to accept more lengthy time periods between updates. A majority of all drivers in both 1998 and 1996 wanted the message updated at least every eight hours.



Public's Understanding of Maintenance Activities

The public's understanding of Caltrans maintenance activities was assessed by providing a "don't know" response on each of the maintenance items presented in the telephone survey. In 1998, the percentage who gave a "don't know" response ranged from 0.2% for maintenance of smooth road surfaces to 7.6% for graffiti removal on bridges and state highways. The percentage of 1996 respondents who gave a "don't know" response to questions ranged from a low of 0.2% on how well Caltrans is doing with ice and snow removal to a high of 5.7% for graffiti removal. Therefore, between 92.4% and 99.8% of 1998 respondents, and 94.3% and 99.8% of 1996 respondents expressed opinions regarding the performance of Caltrans on each maintenance activity.

Summary



Satisfaction levels with Caltrans maintenance activities expressed by California drivers in both the 1998 and 1996 studies were higher than satisfaction levels with highway maintenance expressed by drivers interviewed in the 1995 Cooper & Lybrand (NQI) national study. Priorities for the seven categories of maintenance activities expressed by California drivers were consistent with the national survey except that maintenance response was ranked first in both the 1998 and 1996 Caltrans studies and fourth in the national study.

Regionally, 1998 California drivers in San Diego expressed higher satisfaction levels with 22 of 30 Caltrans maintenance activities than drivers in the other geographic regions. In contrast, 1998 Bay Area drivers expressed lower satisfaction levels on 26 of 30 activities than drivers in the other regions. In 1996, overall satisfaction with Caltrans maintenance ranged from a low of 7.11 to a high of 7.91 on a scale of 1 (extremely dissatisfied) to 10 (extremely satisfied). Ratings by drivers in 1998 ranged from 6.98 to 7.84, down slightly from the 1996 ratings.

The findings from this study will be used in Performance Measurement Development as part of the Caltrans Maintenance Program customer focus component.

Table 1: Summary of Findings from the 1996 and 1998 Caltrans Maintenance Surveys

PRIORITY	SATISFACTION SCORE RANGE BY CATEGORY AND ACTIVITY			DESIRED LEVEL OF SERVICE	PUBLIC UNDERSTANDING	
	1996		1998		1996	1998
1	Maintenance Response	7.20-7.86	7.06-7.82			
(4)	Accident Cleanup	7.59-8.08	7.39-8.11		99.6%	98.9%
	Detours	6.65-7.67	6.32-7.59		99.7%	99.2%
	Disaster Response	7.11-8.02	7.18-7.90		99.4%	99.0%
	Hazard Signs	7.38-7.99	7.27-8.07		99.5%	99.2%
2	Safety	7.37-7.99	7.19-7.96			
(1)	Ice and Snow Removal	7.64-8.11	7.24-8.14	Sign Repair < 1 Day	99.8%	99.5%
	Chain Controls	7.91-8.41	7.72-8.47	Guardrail/Barrier	99.4%	99.0%
	Debris Removal	7.33-8.07	7.04-7.50	Repair < 3 Days	97.5%	97.0%
	Safety Barriers	7.33-8.07	7.32-8.00	Light Repair < 1 Day	97.3%	95.8%
	Shoulders and Turnouts	7.21-7.64	7.13-7.81	Graffiti Removal on	99.0%	98.4%
	Sign Visibility	7.29-8.01	7.16-7.99	Signs 1 Week or less	99.6%	99.5%
3	Pavement Conditions	6.24-7.11	5.83-6.97			
(2)	Smooth Road Surfaces	5.89-7.28	5.60-6.95	Pothole Repairs < 1 Week	99.9%	99.8%
	Surface Traction	6.57-7.35	6.33-7.37		98.1%	95.8%
	Marking Visibility	6.79-7.47	6.55-7.45		99.7%	99.5%
	Removal of Markings	6.49-7.44	6.53-7.30		98.2%	96.2%
	Pothole Repair	5.63-6.77	5.31-6.57		98.7%	99.7%
	Pavement Resurfacing	6.27-7.07	6.03-7.05		99.2%	99.1%

(Note: Priorities in parentheses are the national rankings in the NQI Survey.)

PRIORITY	SATISFACTION SCORE RANGE BY CATEGORY AND ACTIVITY		DESIRED LEVEL OF SERVICE		PUBLIC UNDERSTANDING	
		1996	1998		1996	1998
4	Traffic Flow	6.55-7.23	6.34-7.49			
(3)	Traffic Information	7.33-7.88	7.19-7.70	Updating of Phone Conditions Message < 1 Hour	99.3%	98.9%
	Maintenance Scheduling	6.14-6.90	5.88-6.94	Notification of Roadway Closures < 7 Days	99.6%	99.1%
	Maintenance Delays	5.79-7.06	5.44-6.64	Traffic Delays Due to Scheduled Work < 30 Minutes	99.7%	99.2%
5	Bridge Conditions	7.25-7.91	7.19-7.44			
(5)	Bridge Approaches	6.90-7.85	6.94-7.70		99.5%	99.0%
	Lighting on Bridges	7.07-7.96	6.73-7.80		94.6%	93.1%
6	Travel Amenities	6.93-7.60	6.83-7.65			
(6)	Restroom Maintenance	6.57-7.35	6.29-7.11		99.5%	99.2%
	Rest Area Grounds	7.36-8.09	7.12-8.03		99.4%	98.9%
	Rest Area Safety	6.96-7.60	6.77-7.53		96.5%	94.8%
7	Visual Appeal	6.62-7.39	6.61-7.08			
(7)	Landscape Maintenance	6.50-7.59	6.42-7.48		99.0%	98.8%
	Weed Control	6.28-7.39	6.27-7.21		98.3%	97.4%
	Litter Removal	6.63-7.36	6.13-7.34		99.4%	99.2%
	Graffiti Removal	6.20-7.89	6.11-7.75	Graffiti Removal (Other Than Signs) < 1 Week	94.3%	92.0%
	Trip Quality	7.39-7.84	6.98-7.73			
	Overall Rating	7.11-7.91	6.93-7.75			

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